

Notice of Allowability

Application No.

09/590,796

Examiner

Ayal I Sharon

Applicant(s)

VREUGDENHIL ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 1/24/2005.
2. ☒ The allowed claim(s) is/are 1-23.
3. ☒ The drawings filed on 08 June 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Notice of

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

KEVIN J. KENNA
SUPERVISORY
PATENT EXAMINER

DETAILED ACTION

Introduction

1. Claims 1-23 of U.S. Application 09/590,796, originally filed on 05/27/2004, are presented for examination. The amendment filed 1/24/2005 amends the specification, as well as claims 1, 2, 3, 9, and 12.

Claim Interpretations

2. Applicants define the term "**slot**" in the Specification (p.4, lines 1-3) as follows

(Emphasis added):

"In a system of simultaneous equations, each system variable is said to have a "slot" and there is some set of equations that can be used to fill the slot in order to associate the system variable with an equation for solving the system of equations."

3. Examiner interprets the functionality of "**simultaneous equations**" as being equivalent to the "simultaneous statements" functionality taught in IEEE Standard 1076.1-1999. March 18, 1999. (See IEEE Std 1076.1-1999, pp.225, Section "15. Simultaneous Statements").
4. Applicants define the term "**analog solution iteration**" as follows (See Specification, p.4, lines 21-23):

"An analog solution iteration is defined to occur when the analog solver requires that values need to be determined for the expressions forming the equations in the system."

5. Applicants define the term “**dynamic slot target variable**” as follows (See Specification, p.5, lines 7, and 11-14):

“Assume that the partitioning results in a set of system variables $Q_1 \dots Q_m$ and ... For each j from 1 to m , generate a new unconditional association between the slot for [system variable] Q_j and a variable q'_j where q'_j is a new temporary variable that is otherwise undefined. Each q'_j is called the **dynamic slot target** variable for the associated [system variable] Q_j .”

Response to Amendment

Re: Claim Objection

6. While not marked as such, Examiner finds that Claim 1 has been amended to correct the following informality: The phrase “using the solution **tot eh** system ...” has been amended to “using the solution **to the** system ...”. Examiner is therefore withdrawing the claim objection

Examiner’s Statement of Reasons for Allowance

7. Applicants argue the following in the amendment filed on 01/24/2005 (see p.10-15):

Claim 1 is amended to explicitly require partitioning of the system variables into two sets as follows: a fixed set and a dynamic set. Each system variable in the fixed set is an unknown with a fixed association to a single equation. Each system variable in the dynamic set has a dynamic slot target variable associated with one of the slots in the system of simultaneous equations. Support for the amendment to Claim 1 is found at page 3, lines 7-8 and also at page 4, lines 32-33. Such an act of partitioning is nowhere disclosed or suggested in the combined teachings of Christen-2 and Applicants’ Admission.

8. In addition, Applicants argue the following on pp.12-13 of the same amendment:

The Examiner further cited to Christen-2's example of a bouncing ball (on page 275), stating that he is interpreting $v\dot{\text{dot}}$ as a dynamic slot target variable associated with a slot in the system of simultaneous equations. The Examiner's interpretation is incorrect. Applicants submit that Christen-2's example has the following variables and equations ...

... Note that there is no indication by Christen-2 as to how such a system of equations is to be set up inside a computer for use by a prior art method. Specifically, there is no indication whatsoever as to how to create the input which is to be provided to a simultaneous equation solver.

In contrast, when using the method of Claim 1 in the above example, since there are 3 fixed characteristic expressions, the fixed set of system variables has size 3, and the dynamic set has size 1. This means that there is one dynamic slot target variable, to which the active conditional condition is assigned. At each iteration, a specific equation which is to be assigned to the dynamic slot target variable is selected as recited in Claim 1.

9. Examiner has found these arguments to be persuasive, in particular the limitation in independent Claims 1-2 and 12: "partitioning the system variables into a fixed set and a dynamic set", and the limitation in independent Claim 22: "... means for selecting a set of active conditional equations..."
10. Examiner is therefore allowing the independent claims with the argued limitations: Claims 1-3, 12, 23, as well as all dependent claims.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ayal I. Sharon whose telephone number is (571) 272-3714. The examiner can normally be reached on Monday through Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached at (571) 272-3716.

Any response to this office action should be faxed to (703) 872-9306,
or mailed to:

USPTO
P.O. Box 1450
Alexandria, VA 22313-1450

or hand carried to:

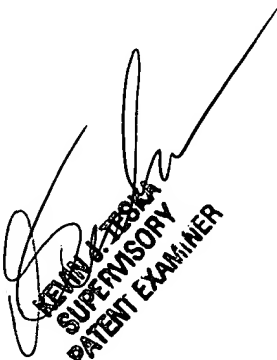
USPTO
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center 2100 Receptionist, whose telephone number is (571) 272-2100.

Ayal I. Sharon

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March 12, 2005


KEVIN A. TESKA
SUPERVISORY
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